Regulatory Finance Concepts Educational Seminar

Session 1: The Regulatory Compact

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About NRRI

The National Regulatory Research Institute (NRRI) was founded in 1976 by the National Association of Regulatory Utility Commissioners (NARUC). NRRI serves as a research arm to NARUC and its members, the utility regulatory commissions of the 50 states, the District of Columbia, Puerto Rico, and the US territories. NRRI's primary mission is to produce and disseminate relevant and applicable research and training for NARUC members and the regulatory community.

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What does "to regulate" mean?

- Oxford English Dictionary :
  - To control, govern, or direct by rule or regulations
  - A regulation is "a rule prescribed for the management of some matter, or for the regulating of conduct; a governing precept or direction; a standing rule"
- Sustained and focused control exercised by a public agency over activities that are valued by a community
- Regulation is often thought of as restricting behavior ("red light concept"), but it may be enabling or facilitating ("green light concept")

Source: Baldwin and Cave, Understanding Regulation, 1999

Why regulate?

- Further the “public interest”
- Prevent or compensate for market failure
- Avoid monopoly abuse
- Rationalize industry – avoid destructive competition
- Self interest/regulatory capture – create barriers to entry
- Assure accurate and adequate information
- Provide financial stability

What is a public utility?

- Public utilities are entities subject to direct government regulation of prices and services
- An enterprise that supplies continuous or repeated services through physical connections between the supplier and the customer
- Subject to rate control for the protection of consumers

The dimensions of utility regulation

- Price regulation – cost of service regulation
- Quantity – adequate service (“resource adequacy”)
- Entry and Exit – exclusive provision of service within a given area
- Anti-trust – market manipulation
- Quality – safe service, clean water
- Consumer Protection – e.g., shutoff policy

Critical questions in utility regulation

- What are utilities allowed or obligated to do?
- How do they charge for those services?

"Affected with a public interest…"

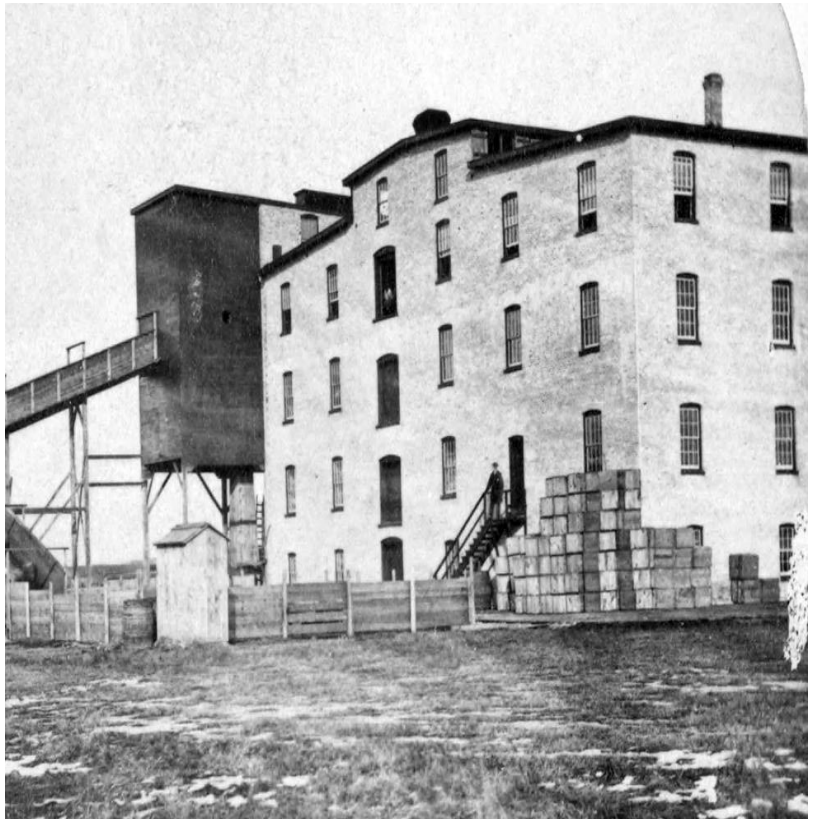
"If the king or subject have a public wharf unto which all persons that come to that port must come as for the purpose to unlade or lade their goods, *because they are the wharfs only licensed by the queen*, … there cannot be undertaken arbitrary and excessive duties or cranage, wharfage, pesage (fee for weighing), and so forth, neither can they be enhanced to an immoderate rate, but the duties must be reasonable and moderate … For now the wharf and crane and other convenience are affected with a public interest."

– *Lord Hale De Portibus Maris 1670*

Basis for U.S. price regulation: Munn v. Illinois (1876)

- Munn and his partners owned a third of grain elevator capacity in Chicago in the 1860's
- Grain elevator owners were known to collude on price
- Illinois passed legislation regulating the maximum price of storage
- Munn ignored the price regulation and challenged ability of the state to regulate privately owned enterprises
- Supreme Court upheld ability of states to regulate prices of industry "affected with a public interest."

  "when private property is devoted to a public use, it is subject to public regulation."



Source: https://chicagology.com/harbor/grainelevators/

The concept of natural monopoly

John Stewart Mill articulates the concept of a natural monopoly in *Principles of Political Economy* (1885):

> *How great an economy of labour would be obtained if London were supplied by a single gas or water company instead of the existing plurality. While there are even as many as two, this implies double establishments of all sorts, when one only with a small increase, could probably perform the whole operation equally well; double sets of machinery and works, when the whole of the gas or water required could generally be produced by one set only.*

Formal definition of natural monopoly

- A natural monopoly is a firm that exhibits economies of scale
- Economies of scale – one firm can produce a given good at a lower cost than two or more firms
- Economies of scope are increasingly providing a basis for defining entities as natural monopolies
- Economies of Scope – one firm can provide a bundle of products for less than two or more firms

The business of economies of scale

- Load diversity occurs when different customers use power at different times
- Diversity reduces generation requirements reducing costs, encouraging load growth
- Load growth enabled capture of economies of scale

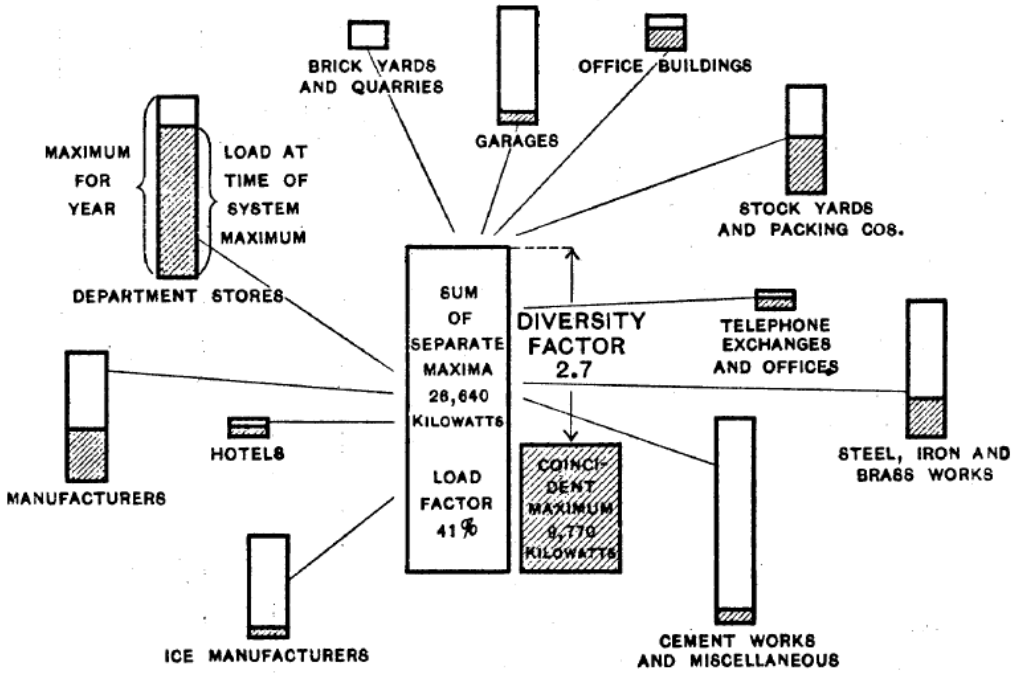


Fig. 8. Diversity of Electricity Requirements of Large Customers

Enabling economies of scale through regulation

- Insull's 1898 Presidential address to the National Electric Light Association
  - In Order to protect the public, exclusive franchises should be coupled with the conditions of public control, requiring all charges for services fixed by public bodies to be based on cost plus a reasonable profit…cost will be reduced in direct proportion to the protection afforded by the industry,
  - Public control of charge for service, based on cost plus a reasonable profit, and eliminating the factor of competition, is the proper safeguard for the interests of users, taxpayers and investors.
- Insull's 1916 address to the National Electric Light Association
  - Another advantage in creating these commissions is, if the laws are properly drawn, competition is prevented

The consumer protection basis for regulation

- The New York City Charter requiring annual bidding for lighting contracts
- By 1900, the Consolidated Gas Company – gave a single bid
- Refusal to negotiate price led to investigation of Gas and Electric Companies
- Charles Evans Hughes, a distinguished New York City attorney, led the investigation
  - It found utilities overcharging the public, guilty of rate discrimination, and providing unsafe and unreliable service.
  - It recommended that to "prevent a recurrence of the mischiefs revealed in this investigation," Hughes recommended the creation of an independent regulatory agency with power to investigate the quality of service provided by the utilities and the reasonableness of their rates.
- Hughes became governor by defeating William Randolph Hearst in 1906
- In 1907, Governor Hughes created the New York Public Service Commission
- Wisconsin also introduced regulation in 1907 to protect customers

Is competition a substitute for regulation?

- Some industries that were not natural monopolies have been subject to price regulation (trucking, field price of natural gas)

- Some segments of a vertically integrated utility could be competitively provided
  - In electricity – generation can be competitively provided
  - Electric distribution remains a natural monopoly

The "Regulatory Compact" –Utility Obligations

- Utility Obligation
- Serve all within the utility's service territory
- Provide service at non-discriminatory prices regulated by the state
  - Just and reasonable rates
- No preferences in quality or terms of service
- Render safe and adequate service
  - Acquire capital required to render service

Regulatory Obligations

- Develop rates
  - Provide access and recovery of capital
  - Depreciation
- Reasonable conditions on terms of service

Legal Basis for Depreciation

- *City of Knoxville v. Knoxville Water Co*., 212 U. **S.** 1, 13-14, 29 Sup. Ct. 148, 152 (1909):

  "The Company is not bound to see its property gradually waste, without making provision out of earnings for its replacement. It is entitled to see that from earnings the value of the property invested is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning. It is not only the right of the company to make such a provision, but it is its duty to its bond and stockholders, and, in the case of a public service corporation at least, its plain duty to the public."

- Therefore, depreciation avoids takings of property

Important U.S. Supreme Court Decisions

- *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923)
- *FPC v. Hope Natural Gas*, 320 U.S. 591 (1944)

Rate of Return Standards

- In Bluefield, the Court held that a utility was entitled to a return:

  " . . . equal to that generally being made at the same time and in the same general part of the country on investments and in other business undertakings which are attended by corresponding risks and uncertainties. (at 692)"

Rate of Return Standards (Cont'd)

- But, the Court also said in *Bluefield* that a utility…

  ". . . has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness in the utility . . . and enable it to raise the money necessary for the proper discharge of its public duties." (at 692-3)

- That is, the utility is entitled to normal profits but not economic profits

Rate of Return Standards (Cont'd)

- In *Hope*, the Court adopted an "end result" test, holding that…

  ". . . the returns to the equity owner should be. . . sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and attract capital." (at 603)

- What is important is the outcome, not the method used.

Rate of Return Standards (Cont'd)

- In *Hope*, the Court also held that…

  ". . . Rates which enable a [utility] to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risks assumed can not be condemned as unjust and unreasonable . . ." (at 605)

- Bottom Line…the utility investor's return to the equity/stock owners should be:

  - commensurate with the returns on investments in other enterprises with similar risks
  - sufficient to assure confidence in the financial integrity of the utility so as to maintain its credit and to attract capital

Development of rates is a three step process

- Determination of the revenue requirement
- Allocate the costs to different classes of users in a cost of service study
  - Requires classification and functionalization of costs
  - Design rates

Fundamental Rule of Ratemaking

Revenue Requirement =

Return on Capital
+ Return of Capital

+ Operating and Maintenance Expenses

(fuel, labor, maintenance)

+ Taxes

Return on capital = rate of return x undepreciated rate base

Rate base – capital investment in facilities, equipment and property

Return of capital = depreciation